

**Strategic logistics planning and inventory management strategies**

**Aida Yerimpasheva, c.e.s., Senior Lecturer**

**Lecture 10. Inventory Models**

**Introduction:** Inventory models are mathematical models used to help companies make decisions about how much inventory to hold and when to order new inventory. Inventory models are a critical component of inventory management and can help companies balance the cost of holding inventory with the cost of stockouts.

**Section 1: Types of Inventory Models**

There are a number of different inventory models that companies can use to manage inventory, including just-in-time (JIT) models, economic order quantity (EOQ) models, and safety stock models.

Each of these models has different strengths and weaknesses, and companies must consider their specific needs when choosing an inventory model.

For example, JIT models are designed to minimize inventory costs by ordering inventory just in time to meet customer demand, while EOQ models are designed to balance the cost of holding inventory with the cost of ordering new inventory.

**Section 2: Factors Affecting Inventory Model Selection**

Companies must consider a number of factors when choosing an inventory model, including the nature of their business, the variability of demand, and the cost of holding inventory.

For example, a company that operates in a highly unpredictable market may choose to use a JIT model, while a company that operates in a more predictable market may choose to use an EOQ model.

Additionally, companies must consider the impact of technology, such as inventory management software, on their ability to track and manage inventory levels.

**Section 3: Benefits of Using Inventory Models**

Companies that use inventory models can realize a number of benefits, including reduced costs, improved customer satisfaction, and increased competitiveness.

Inventory models help companies make informed decisions about inventory levels and can improve their ability to respond to changes in demand.

Additionally, inventory models can help companies avoid stockouts and reduce the amount of excess inventory they hold, which can improve overall supply chain efficiency.

**Questions:**

1. What are inventory models and how are they used in inventory management?
2. What are the different types of inventory models and what are the strengths and weaknesses of each?
3. What factors must companies consider when choosing an inventory model?
4. What are the benefits of using inventory models for companies and how can they improve supply chain efficiency?